

A NEW SPECIES OF THRIPS FROM THE MOJAVE DESERT

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The discovery of another new species of *Dactuliothrips* makes it advisable to review the present status of the family *Melanthripidae*. Bagnall (1913a, and 1913b) created the sub-family *Melanothripinae* to include *Melanthrips* Haliday, 1836 and *Ankothrips* D. L. Crawford, 1910. In 1915 the same writer described the genus *Cranothrips* in this group. Later, in 1926, Bagnall raised this sub-family to the rank of a family including the three above-mentioned genera and the fossil genera *Eocranothrips* Bagn., *Opadothrips* Pr., and *Archankothrips* Pr. Again, in 1928 (see also Bagnall, 1930) Bagnall further elevated the *Melanthripidae* to the status of a super-family and wrote that "The genus *Opadothrips* Pr. (fossil), has had to be removed to the *Heterothripodea*."

Two additional genera in the *Melanthrips* group were described in 1931, namely, *Dorythrips* Hood and *Dactuliothrips* Moulton. Therefore, at present, there are five non-fossil genera in the *Melanthripidae* as defined by Bagnall. Concerning *Dorythrips* Hood stated, "Its affinities are decidedly with *Melanthrips* Haliday, of which it is merely an elaboration." At the time Moulton described *Dactuliothrips spinosus* he erected a new family, *Dactuliothripidae*, for it and placed it in the super-family *Melanthripodea*. It is true that *D. spinosus* does not have the dagger-like scoop (or flattened spurs) at the apex of the fore tibia as in *Melanthrips*, nor does it have the projected vertex as in *Dorythrips*, or basal antennal joints produced, as in *Cranothrips* and *Ankothrips*. However, in *D. spinosus*, as well as in *D. boharti* Bailey and *xerophilus* Bailey to a lesser extent (Bailey, 1937), there are two strong spines at the apex of the fore tibia. All other characters place these species in *Melanthripidae*. Now, with the discovery of *D. diversus* Bailey, new species, which has two very strong spurs at the tibial apex, though not flattened to the extent exhibited in *Melanthrips*, the affinities of these two genera are well established. It is interesting to note that in *diversus* the femoral spurs are lacking. This latter character apparently does not constitute a consistently good basis for generic separation. Therefore, it seems unnecessary to retain Moulton's family *Dactuliothripidae*.

With the small number of species so far described in *Dactuliothrips* it has not been necessary to use the chaetotaxy of the pronotum to separate species. In *Melanthrips* this character, together with the sensory areas on antennal segments III and IV, furnish a reliable basis for species differentiation (Priesner, 1936). A study of the genus *Ankothrips* (as yet unpublished) by the writer has shown that the sensoria of the antennæ, the chaetotaxy of the pronotum, together with shape of the projection of the vertex and the serrations on the second antennal segment, offer excellent specific characters. By way of further comparison, it should be mentioned that the antennal sensoria in *Dactuliothrips* show practically no variation. *Dorythrips* and *Cranothrips* are each represented by only one species, the former showing the development of a projection on the vertex, and the latter lacking the cephalic armature but exhibiting the antennal projection.

KEY TO THE FIVE KNOWN, NON-FOSSIL, GENERA OF MELANTHRIPIDÆ

- 1 (4) Antennæ with projections.
- 2 (3) Antennal segment I produced ventrally and apically as a tooth. Type of sensory areas on III and IV unknown. W. Australia.....*Cranothrips* Bagnall, 1915
- 3 (2) Antennal segment II produced ventrally and apically as a tooth. Sensory area on III and IV as a transverse area, varying in width, and partly or almost entirely encircling the segment near tip. South Africa, Europe, North America.
.....*Ankothrips* D. L. Crawford, 1909
- 4 (1) Antennæ without projections.
- 5 (6) Head with a cephalic projection on vertex between base of antennæ. Sensoria as a narrow, transverse area encircling segments III and IV near tip. Chile, South America.....
.....*Dorythrips* Hood, 1931
- 6 (5) Head without a cephalic projection.
- 7 (8) Fore tarsi without claws. Sensoria on antennal segments III and IV variable, usually as a narrow, angular line, nearly encircling the segments near tip; never as separate, oval areas. Europe, Africa, Spain, Mediterranean region.....
.....*Melanthrips* Haliday, 1836
- 8 (7) Fore tarsi with claws. Sensoria on antennal segments III and IV as two small, oval areas on each segment, near tip. W. North America.....*Dactuliothrips* Moulton, 1931

REVISED KEY TO THE SPECIES OF DACTULIOTHRIPS

- 1 (4) Spurs on inner margin of fore femora absent or weak; when present, one to four in number, usually one or two. Spines on body prominent but slender.

- 2 (3) Fore tibiæ with two stout distal spurs (fig. 2); fore femora without spurs. Claw on fore tarsus with strong basal tooth (fig. 2). Antennæ uniformly dark brown.....
.....*D. diversus* Bailey, n. sp.
- 3 (2) Fore tibiæ without distal spurs; fore femora with 1 to 4 (usually 1 or 2) weak spurs on inner margin. Claw on fore tarsus simple or with a very weak tooth near base. Third and basal three-fourths of antennal segment IV yellow, remainder brown.....*D. xerophilus* Bailey
- 4 (1) Spurs on inner margin of fore femora strongly developed, two to nine in number. Spines on body dense and strongly developed.
- 5 (6) Claw on fore tarsus simple and knobbed. Fore femora with 4 to 9 spurs on inner margin. Antennæ uniformly blackish-brown.....*D. boharti* Bailey
- 6 (5) Claw on fore tarsus with small tooth below tip. Fore femora with 2 to 5 spurs on inner margin. Antennæ dark brown with third segment yellow.....*D. spinosus* Moulton

Dactuliothrips diversus Bailey, new species

Female: Color uniformly dark brown with faint red body pigment evident by transmitted light. Wings uniformly grayish brown with veins dark brown, including scale at base of fore wing. Hind wing nearly clear, fuscous, antennæ and legs uniformly dark brown.

Head slightly longer than wide; narrowest at base. Cheeks very slightly curved. Eyes protruding slightly. Three ocelli. Head transversely reticulate on dorsum. Mouth cone short. Antennæ slender, the two basal segments widest. Distinct annulations present on all antennal segments, faint on segment I. Two circular sensory areas on each of segments III and IV.

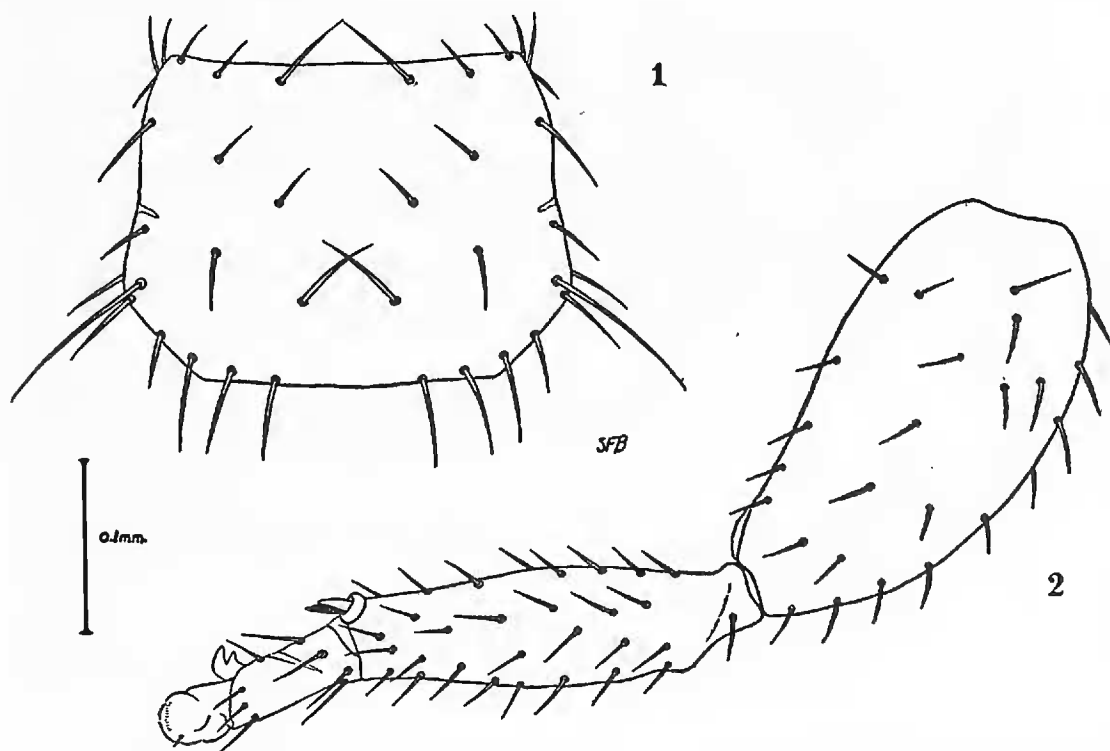
Prothorax (fig. 1) about one-third wider than long. Chætotaxy of pronotum similar to *xerophilus*. Spines not as strongly developed as in *spinus* and *boharti*. Legs irregularly covered with spines. Fore femora thickened and without spurs. Fore tibiæ with two stout spurs at tip. Hind tibiæ with several stout spines at tip. Fore tarsi with a strong claw which has a basal tooth reaching more than half the distance to tip of claw (fig. 2). Entire surface of both wings covered with very minute setæ. Fore wing broadly rounded at tip and distinctly narrowing to base.

Fore wings with four cross veins placed as in other members of the genus. The number of regularly spaced bristles on fore vein of fore wing is from twenty to twenty-six and on the hind vein eighteen to twenty-four. Hind wing clear with a thickening on costal margin near base which supports a row of short bristles, the distal one being the longest.

Abdomen broadly ovate, tapering to tip. Dorsum of segments faintly reticulated.

Measurements of holotype: Total length of body 2.01 mm.; head, length, 0.20 mm., width, 0.18 mm.; prothorax, length, 0.18 mm., width, 0.24 mm.; mesothorax, width, 0.31 mm.; abdomen, greatest width, 0.46 mm. Length of antennal segments in mm.: I, 0.036; II, 0.049; III, 0.069; IV, 0.069; V, 0.056; VI, 0.052; VII, 0.049; VIII, 0.041; IX, 0.046; total length, 0.467. Length of spines: interocellar, 0.049 mm.; postocular (outer), 0.059 mm.; (median), 0.033 mm.; posterior-lateral marginals (pronotum), 0.092 mm.

Male: Smaller and more slender than female. Total body length of allotype 1.46 mm.



Dactuliothrips diversus Bailey, n. sp., fig. 1, pronotum, fig. 2, left fore leg (excluding coxa and trochanter).

Described from twenty-seven females and eight males collected by B. E. White on *Oenothera dentata parishii* at Hinkley (San Bernardino County), California, on April 15, 1938. Type locality, Hinkley, California. Female holotype (slide T 14) and male allotype (slide T 15) in author's collection. In addition to the type series, J. A. Downes collected two females and three males on *Oenothera contorta* and *Coreopsis*, on April 13, 1938, at Hi-Vista (near Lancaster), California.

This group of thrips appears to be limited to the desert area east of the Sierra and Siskiyou mountains. Assiduous collecting in the spring in this area, particularly in eastern Oregon and Washington and the desert areas of western North America will

doubtless bring to light additional species. The larvæ of *Dactuliothrips* are as yet unknown. Based on life history studies of other genera in the *Æolothripoidæ* in California, this genus has all the characteristics of the cocoon spinning species thus far reared. Also, there is probably only one generation a year, correlated with the blooming of the native flowers and shrubs.

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